

same content as condition C₁₃ should also be associated with form F₃. The linkages between forms then appear more as a network than as a linear flow. Any desired pathway among forms can be implemented using this structure.

Paragraph 101:

Preferably, other biological and medical data are collected and analyzed with the clinical data. For example, a comprehensive bioanalysis of patient blood samples can identify a biomarker (e.g., increase in a specific cytokine as a marker for development of rheumatoid arthritis), which can then be correlated with a clinical symptom obtained by the present invention. Other methods for the identification of biological markers are described in copending U.S. Patent Application Ser. No. 09/558,909, "Phenotype and Biological Marker Identification System," filed 4/26/2000, which is herein incorporated by reference. Note that a biomarker is not limited to the presence of a certain symptom; it includes without limitation a pattern of symptoms, a symptom in combination with a positive laboratory value, and so on.

REMARKS

Minor amendments have been made to the Specification to correct obvious typographical errors and to update prior application data. The amendments to the Specification do not add any new matter to the application or affect the claimed invention.

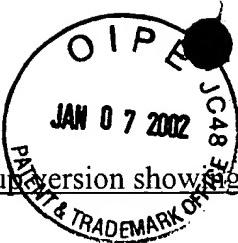
It is believed that no additional fee is due with this Amendment. If this is in error, please charge any necessary fees to Deposit Account No. 19-5117.

Respectfully submitted,

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Darla G. Yoerg, #48,053
Swanson & Bratschun, L.L.C.
1745 Shea Center Drive, Suite 330
Highlands Ranch, Colorado 80129
Telephone: (303) 268-0066
Facsimile: (303) 268-0065



Marked up version showing changes to specification under 37 C.F.R. § 1.121(b)(iii)

Paragraph 1:

This application claims the benefit of U.S. Provisional Application Nos. 60/220,135, "Computerized Medical Questionnaire and Biomarker Identification System Including Network Access," filed 7/21/2000, and 60/226,204, "Longitudinal Patient-Centered Collection and Analysis of Clinical Data," filed 8/18/2000, both of which are herein incorporated by reference. This application is related to copending U.S. Application No. 09/558,909, "Phenotype and Biological Marker Identification System," filed 4/26/2000, which is herein incorporated by reference.

Paragraph 6:

Also known in the art are computerized medical diagnostic questionnaires, such as that described in U.S. Patent No. 6,022,315, issued to Iliff. The system described in Iliff is intended to provide diagnostic and treatment advice to the general public over a computer network, such as the Internet. The Iliff system presents a number of medical complaint algorithms that pose questions to the patient and diagnoses a medical condition based upon whether the patient's responses result in a score exceeding a threshold value. The questionnaire described in Iliff is not intended to elicit questions about the general state of a patient's health, but rather to arrive at a diagnosis. One limitation of the system is that once the algorithm is keyed toward a particular disease, the questions do not elicit responses regarding a patient's condition or state of health that are inconsistent or not immediately relevant to the hypothesis, unless that hypothesis is subsequently ruled out. As a result, the responses collected by the system described in Iliff provide an incomplete view of the patient's overall medical status or well-being.

Paragraph 10:

A number of short, health-related questionnaires, some of them web-based, have been used in general population surveys, clinical practice, and medical research. For example, the SF-36[®] SF-36[®] Health Survey is a health risk assessment questionnaire consisting of 36 multiple choice questions. Although the SF-36[®] SF-36[®] Health Survey can

be completed by the patient, it is not designed to gather comprehensive organ system information, and is fixed to 36 questions. Forms are also available on the web for completion by prospective participants in clinical trials. A user enters basic medical information into a form, the information is stored, and the user is contacted if an applicable clinical trial becomes available for participation. Simple medical surveys are also available as web-based forms. In general, such web-based surveys consist of single- or multi-page forms that are static: the user completes a set number of questions and clicks a submit button to submit the data to the web server. There is no substantial interactive behavior between the user and questionnaire.

Paragraph 52:

In general, not all potential questions of a given form are presented to a subject; rather, the presented questions are selected dynamically based on the subject's response to previous questions, either on the same or on different forms. The set of presented questions can change as the subject responds to questions, and thus a given subject may or may not see a particular form change in response to his or her answers or other data received. As shown in FIG. 6, the links between a form F_i and its questions Q_i , and also to other forms, are not fixed, but are governed by conditional statements ϵ_{Qi} C_{Qi} and ϵ_{Fi} C_{F1} containing references to particular questions and their responses. Conditional statements contain one or more Boolean expressions that can be evaluated as true or false, and a question or form is presented only if its associated condition evaluates to true. For example, a typical conditional statement is "if the subject responded positively to the question 'have you lost weight in the last six months?', present the question 'how much weight have you lost?'." Of course, much more complex expressions that depend upon responses to more than one question can be used. In certain instances, the conditions can always evaluate to true or always evaluate to false.

Paragraph 56:

Typically, a single form can lead to multiple forms; e.g., both conditions C_{12} and C_{13} can evaluate to true. Various mechanisms can be employed to determine which form should be presented next in such a situation. For example, the conditions and associated

forms can be ordered; e.g., condition C₁₂ is always evaluated before condition C₁₃. If, in this case, it is desired to present both forms E₂ F₂ and E₃ F₃, then a condition C₂₃ having the same content as condition C₁₃ should also be associated with form E₃ F₃. The linkages between forms then appear more as a network than as a linear flow. Any desired pathway among forms can be implemented using this structure.

Paragraph 101:

Preferably, other biological and medical data are collected and analyzed with the clinical data. For example, a comprehensive bioanalysis of patient blood samples can identify a biomarker (e.g., increase in a specific cytokine as a marker for development of rheumatoid arthritis), which can then be correlated with a clinical symptom obtained by the present invention. Other methods for the identification of biological markers are described in copending U.S. Patent Application Ser. No. 09/558,909, "Phenotype and Biological Marker Identification System," filed 4/26/2000, which is herein incorporated by reference. Note that a biomarker is not limited to the presence of a certain symptom; it includes without limitation a pattern of symptoms, a symptom in combination with a positive laboratory value, and so on.